

Rec'd PCT/PTO 01 NOV 2004

10/510962

PCT/EP2003/004798

PATENT COOPERATION TREATY



Translation

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0000053539	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/004798	International filing date (day/month/year) 08 May 2003 (08.05.2003)	Priority date (day/month/year) 14 May 2002 (14.05.2002)
International Patent Classification (IPC) or national classification and IPC C09C 1/00		
Applicant BASF AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 17 September 2003 (17.09.2003)	Date of completion of this report 29 October 2004 (29.10.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/004798

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 1-14 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____ 1-10 _____, filed with the letter of _____ 25 May 2004 (25.05.2004)
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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International application No.
PCT/EP 03/04798

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations

This report makes reference to the following documents:

D1: US5234496 A

D2: WO9838253 A

Novelty:

3. Document D1 discloses (the references in parentheses are to that document) goniochromatic pearlescent pigments coated with alkylglycol ethers (column 2, lines 9-56; example 1).

The subject matter of claim 1 therefore differs from the known pigment (translucent pearlescent pigments) in that it relates to a goniochromatic pigment (containing reflecting layers) and in that the polar organic solvent is dispersed into the pigment.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

4. Document D2 discloses (the references in parentheses relate to that document) pigment preparations in which pearlescent pigments, *inter alia*, are also

mixed with an organic solvent and homogenised at 80°C to 150°C (see page 8, lines 12-25; page 3, lines 1-14). Polar solvents such as ethylene glycols come into question as solvents (see page 6, line 29 to page 7, line 11). However, these are conventional pearlescent pigments. D2 also discloses the use of metallic effect pigments comprising aluminium flakes coated with a metal oxide.

The subject matter of claim 1 therefore differs from the pigments known from D2 in that goniochromatic pigments with at least one dielectric, low-refraction layer are used and in that the polar organic solvent is dispersed into the pigment.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

- 5.1 Document D2, which is considered to represent the closest prior art, discloses pigment preparations (see paragraph 4) from which the subject matter of claim 1 differs in that goniochromatic pigments are used having at least one dielectric, low-refraction layer, and in which a polar organic solvent is dispersed.
- 5.2 In view of the differentiating feature, the problem addressed can be considered to be that of providing goniochromatic pearlescent pigments whose colouring undergoes little change and stabilises faster when used in baking enamels.
- 5.3 The dispersion of the organic polar solvent expels the water contained in the low-refraction layer and at the same time largely prevents water from being

re-absorbed. The presence of water in pigments causes the colour of baking enamels to stabilise once the baking enamel loses water after baking (at about 130°C), only after hours or days, by reabsorption of water from the environment.

D1 and D2 fail to address this problem. D1 addressed the problem of providing a pearlescent pigment preparation that can be easily incorporated into coating formulations (see D1, column 1, lines 41-44).

D2 addressed the problem of providing stable, non-dusting, homogeneous pearlescent pigment preparations which can also be advantageously used in aqueous coating systems and at the same time are characterised by high compatibility with the remaining components of such coating systems.

Both in D1 and D2, the pearlescent pigment is reacted with the organic solvent at room temperature, and it must therefore be assumed that the organic, polar solvent in question is not dispersed (see the examples in documents D1 and D2).

- 5.4 The solution to this problem, as proposed in claim 1 of the present application, therefore involves an inventive step (PCT Article 33(3)).
- 5.5 Claims 2-6, 9 and 10 are dependent on claim 1 and therefore likewise meet the PCT inventive step requirements.
6. The subject matter of claim 7 represents a method which necessarily leads to the product of claim 1.

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The subject matter of claim 7 therefore also meets the PCT novelty and inventive step requirements.

- 6.1 Claim 8 is dependent on claim 7 and therefore likewise meets the PCT inventive step requirements.